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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,548	06/30/2000	Lincoln Dale	CISCP171	2364

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EXAMINER	
STRANGE, AARON N	

ART UNIT	PAPER NUMBER
2153	

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/608,548	DALE ET AL.	
	Examiner	Art Unit	
	Aaron Strange	2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-32 and 34-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-32 and 34-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 11/10/2004 have been fully considered but they are not persuasive.

2. In response to Applicant's argument that there is no suggestion to combine the references (Page 12, Lines 9-16 of Remarks), the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, one of ordinary skill in the art would have been motivated to use the system disclosed by Basilico to control the load on the cache servers disclosed by Yates.

3. With regard to Applicant's assertion that Basilico teaches away from adding a cache system (Page 12, Lines 13-16 of Remarks), Applicant has failed to provide any evidence of such a teaching. At no point does Basilico disclose or remotely suggest that a cache server could not be added to the disclosed system.

4. With regard to Applicant's assertion that the system discloses by Basilico is "vastly different than configuring or using a CAM to distribute data to different cache systems" (Page 12, Lines 17-19 of Remarks), the Examiner respectfully disagrees. Applicant's assertion appears to be based on the assumption that distributing requests to different devices would require an elaborate modification of the server disclosed by Basilico (Page 12, Lines 26-30 or Remarks). This is simply not the case. In order to distribute data to different cache systems, rather that different ports on a single server, would simply require that the different cache systems be connected to the output ports of the LAN switch. To a LAN switch, there is no difference between a plurality of network cards in a single server and a plurality of network cards in various cache servers. Each card has a unique address, and the LAN switch has no knowledge regarding the physical location of the card it is addressing.

5. With regard to Applicant's assertion that "In sum, one cannot simply add a cache system into the system of Basilico. Most importantly, there is no reasonable expectation of success that a cache system would work in the system of Basilico which distributes data to different ports and NIC's of a same server" (Page 13, Lines 1-3 of Remarks), the Examiner respectfully disagrees. As discussed above, to a LAN switch such as the one disclosed by Basilico, there is no difference between a plurality of network cards in a single server and a plurality of network cards in various cache servers. Therefore, one of ordinary skill in the art would have a reasonable expectation of success since the type of device connected to the output ports of a LAN switch such as the one disclosed

by Basilico is not relevant to the functionality of the system, and it would be readily recognized that a cache server would be able to connect to the output ports as well as any other server.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 16 recites the limitation "the selected device" in claim 16. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claim 30 is rejected under 35 U.S.C. 102(e) as being anticipated by Basilico (US 6,243,360).

11. With regard to claim 30, Basilico discloses that each entry in the CAM includes a set of bit values that correspond to at least a portion of a packet and each entry including one or more destination fields indication where to send a packet that matches the entry's set of bit values (col. 5 lines 8-23) and indicating whether to redirect the packet from the destination indicated by the packet (header indicating group of header output ports allows the packet to redirect to any of the available destinations indicated in the group passed on load or failures, step 512, col. 6 lines 10-14 and col. 3 lines 40-48), wherein the CAM is configured to distribute received packet to the plurality of processing devices based on a load balancing technique (col. 5 lines 24-36).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 1, 10, 15, 24, and 29-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Basilico (US 6,243,360).

14. With regard to claims 1, 15, 29, and 31, Basilico discloses a system, method, and computer program for dynamically load balancing packets in a network switch to a plurality of network interface cards, comprising: configuring a content addressable memory (CAM) to indicate distribution of received packets based on a load balancing technique to a plurality of processing devices based on a load balancing technique to a plurality of processing devices (col. 3 lines 40-48, col. 5 lines 16-30); receiving a packet (col. 4 lines 18-28); inputting at least a portion (e.g. destination address field 38) of the packet into CAM (col. 5 line 8-16); obtaining a result (code) from the CAM to indicate whether to redirect the received packet to a selected processing device and to indicate to which processing device selected from among the plurality of processing devices the received packet is to be redirected (code embedded in header, see fig. 5B, step 506); redirecting the received packet to the selected processing device when the CAM indicates to redirect the received packet (col. 5 lines 24-27, note that the redirecting to another NIC when a destination is busy the switch/CAM implements dynamic load balancing technique); and sending the received packet to a destination indicated by the received packet when the CAM does not indicate to redirect the received packet (step 512, col. 6 lines 10-15, note that when the destination is not busy, the packet is directed towards original destination). However, Basilico fails to specifically disclose that the processing devices are cache systems that spoof a destination.

Yates teaches a method for a router distributing client requests to a cache server system (16) selected from a plurality of cache storages (18). Yates includes a method for redirecting client request to the cache systems. This determination is made at the

router using filters (col. 7 lines 46-56). Given this feature, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system shown by Basilico to employ the features shown by Yates in order to improve and reduce redundancy of data delivery and access (see col. 5 lines 21-24).

Therefore, it would have been obvious to one or ordinary skill in the art at the time the invention was made to use cache servers in place of the processing devices since it would have allowed control of the load on the cache servers.

15. With regard to claim 16, as discussed regarding claim 15, Yates further discloses that the selected device is selected from a plurality of cache systems.

16. In referring to claims 3, 17, and 34, Yates shows results indicate to redirect the packet from being sent to a destination specified in the received packet (col. 7 lines 39-42).

17. In referring to claims 4, 12, 18, 26, and 35, Yates shows result includes a processing device identification corresponding to the selected device (18) to which the received packet is to be sent (col. 7 lines 36-42).

18. In referring to claims 6, 20, and 37, Basilico shows portion of received packet is input into the CAM is selected from a group consisting of a destination address, a

destination port, source port, and a protocol (fig. 2, col. 4 lines 36-51, col. 5 lines 5 liens 12-15).

19. In referring to claims 11 and 25, Yates shows destination field includes an action field indicating whether to redirect the packet from a destination indicated by the packet itself (col. 7 lines 39-42).

20. Claims 5, 7-9, 13, 14, 19, 21-23, 27, 28, 36 and 38-40, are rejected under 35 U.S.C. 103(a) as being unpatentable over Basilico in view of Yates et al. and in further view of Nataraj et al (US 6,154,348).

21. In referring to claims 5, 14, 19, 28, and 36, although the combined teachings of Basilico and Yates show substantial features of the claimed invention, as discussed above, it fails to disclose *ternary CAM*. Nonetheless, this feature is well known in the art and would have been an obvious modification to the system shown by Basilico and Yates as evidenced by Nataraj.

In an analogous art, Nataraj shows a method for comparing bit values and a matching transistor determining the match state. Nataraj shows ternary CAM for carrying out these memory comparisons.

Given this feature, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system shown by Basilico

and Yates to employ the features shown by Nataraj in order to increase overall speed of comparison functions and decrease power drain (see col. 2 lines 53-58).

22. In referring to claim 7, 21, and 38, Basilico shows CAM entry includes bits-to-match field (see fig. 3, "56" header), an action filed and redirection destination field (output port, 66).

23. In referring to claim 8, 22, and 39, Yates shows redirection destination field identifies a cache system (col. 7 lines 39-41).

24. In referring to claims 9, 23, and 40, Yates shows action field indicates whether the received packet is to be redirected (col. 7 lines 48-56).

25. In referring to claims 13 and 27, Nataraj shows a set of bit values include at least a 1 or a 0 value and a don't care value (col. 1 lines 36-39).

Conclusion

26. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Strange whose telephone number is 571-272-3959. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS
4/12/2005

KRISNA LIM
PRIMARY EXAMINER